

1 **TITLE IV—COAL**  
2 **Subtitle A—Clean Coal Power**  
3 **Initiative**

4 **SEC. 401. AUTHORIZATION OF APPROPRIATIONS.**

5 (a) CLEAN COAL POWER INITIATIVE.—There are au-  
6 thorized to be appropriated to the Secretary of Energy (re-  
7 ferred to in this title as the “Secretary”) to carry out the  
8 activities authorized by this subtitle \$200,000,000 for  
9 each of fiscal years 2006 through 2014, to remain avail-  
10 able until expended.

11 (b) REPORT.—The Secretary shall submit to Con-  
12 gress the report required by this subsection not later than  
13 March 31, 2007. The report shall include, with respect  
14 to subsection (a), a 10-year plan containing—

15 (1) a detailed assessment of whether the aggre-  
16 gate funding levels provided under subsection (a) are  
17 the appropriate funding levels for that program;

18 (2) a detailed description of how proposals will  
19 be solicited and evaluated, including a list of all ac-  
20 tivities expected to be undertaken;

21 (3) a detailed list of technical milestones for  
22 each coal and related technology that will be pur-  
23 sued; and



1 (4) a detailed description of how the program  
2 will avoid problems enumerated in General Account-  
3 ing Office reports on the Clean Coal Technology  
4 Program, including problems that have resulted in  
5 unspent funds and projects that failed either finan-  
6 cially or scientifically.

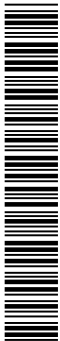
7 **SEC. 402. PROJECT CRITERIA.**

8 (a) IN GENERAL.—The Secretary shall not provide  
9 funding under this subtitle for any project that does not  
10 advance efficiency, environmental performance, and cost  
11 competitiveness well beyond the level of technologies that  
12 are in commercial service or have been demonstrated on  
13 a scale that the Secretary determines is sufficient to dem-  
14 onstrate that commercial service is viable as of the date  
15 of enactment of this Act.

16 (b) TECHNICAL CRITERIA FOR CLEAN COAL POWER  
17 INITIATIVE.—

18 (1) GASIFICATION PROJECTS.—

19 (A) IN GENERAL.—In allocating the funds  
20 made available under section 401(a), the Sec-  
21 retary shall ensure that at least 60 percent of  
22 the funds are used only for projects on coal-  
23 based gasification technologies, including gasifi-  
24 cation combined cycle, gasification fuel cells,



1 gasification coproduction, and hybrid gasifi-  
2 cation/combustion.

3 (B) TECHNICAL MILESTONES.—The Sec-  
4 retary shall periodically set technical milestones  
5 specifying the emission and thermal efficiency  
6 levels that coal gasification projects under this  
7 subtitle shall be designed, and reasonably ex-  
8 pected, to achieve. The technical milestones  
9 shall become more restrictive during the life of  
10 the program. The Secretary shall set the peri-  
11 odic milestones so as to achieve by 2020 coal  
12 gasification projects able—

13 (i) to remove 99 percent of sulfur di-  
14 oxide;

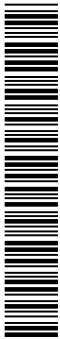
15 (ii) to emit not more than .05 lbs of  
16 NO<sub>x</sub> per million Btu;

17 (iii) to achieve substantial reductions  
18 in mercury emissions; and

19 (iv) to achieve a thermal efficiency  
20 of—

21 (I) 60 percent for coal of more  
22 than 9,000 Btu;

23 (II) 59 percent for coal of 7,000  
24 to 9,000 Btu; and



1 (III) 50 percent for coal of less  
2 than 7,000 Btu.

3 (2) OTHER PROJECTS.—The Secretary shall pe-  
4 riodically set technical milestones and ensure that up  
5 to 40 percent of the funds appropriated pursuant to  
6 section 401(a) are used for projects not described in  
7 paragraph (1). The milestones shall specify the  
8 emission and thermal efficiency levels that projects  
9 funded under this paragraph shall be designed to  
10 and reasonably expected to achieve. The technical  
11 milestones shall become more restrictive during the  
12 life of the program. The Secretary shall set the peri-  
13 odic milestones so as to achieve by 2010 projects  
14 able—

15 (A) to remove 97 percent of sulfur dioxide;

16 (B) to emit no more than .08 lbs of NO<sub>x</sub>  
17 per million Btu;

18 (C) to achieve substantial reductions in  
19 mercury emissions; and

20 (D) to achieve a thermal efficiency of—

21 (i) 45 percent for coal of more than  
22 9,000 Btu;

23 (ii) 44 percent for coal of 7,000 to  
24 9,000 Btu; and



1 (iii) 40 percent for coal of less than  
2 7,000 Btu.

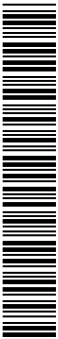
3 (3) CONSULTATION.—Before setting the tech-  
4 nical milestones under paragraphs (1)(B) and (2),  
5 the Secretary shall consult with the Administrator of  
6 the Environmental Protection Agency and interested  
7 entities, including coal producers, industries using  
8 coal, organizations to promote coal or advanced coal  
9 technologies, environmental organizations, and orga-  
10 nizations representing workers.

11 (4) EXISTING UNITS.—In the case of projects  
12 at units in existence on the date of enactment of this  
13 Act, in lieu of the thermal efficiency requirements  
14 set forth in paragraph (1)(B)(iv) and (2)(D), the  
15 milestones shall be designed to achieve an overall  
16 thermal design efficiency improvement, compared to  
17 the efficiency of the unit as operated, of not less  
18 than—

19 (A) 7 percent for coal of more than 9,000  
20 Btu;

21 (B) 6 percent for coal of 7,000 to 9,000  
22 Btu; or

23 (C) 4 percent for coal of less than 7,000  
24 Btu.



1           (5) PERMITTED USES.—In carrying out this  
2 subtitle, the Secretary may fund projects that in-  
3 clude, as part of the project, the separation and cap-  
4 ture of carbon dioxide.

5           (c) FINANCIAL CRITERIA.—The Secretary shall not  
6 provide a funding award under this subtitle unless the re-  
7 cipient documents to the satisfaction of the Secretary  
8 that—

9           (1) the award recipient is financially viable  
10 without the receipt of additional Federal funding;

11           (2) the recipient will provide sufficient informa-  
12 tion to the Secretary to enable the Secretary to en-  
13 sure that the award funds are spent efficiently and  
14 effectively; and

15           (3) a market exists for the technology being  
16 demonstrated or applied, as evidenced by statements  
17 of interest in writing from potential purchasers of  
18 the technology.

19           (d) FINANCIAL ASSISTANCE.—The Secretary shall  
20 provide financial assistance to projects that meet the re-  
21 quirements of subsections (a), (b), and (c) and are likely  
22 to—

23           (1) achieve overall cost reductions in the utiliza-  
24 tion of coal to generate useful forms of energy;



1           (2) improve the competitiveness of coal among  
2       various forms of energy in order to maintain a diver-  
3       sity of fuel choices in the United States to meet elec-  
4       tricity generation requirements; and

5           (3) demonstrate methods and equipment that  
6       are applicable to 25 percent of the electricity gener-  
7       ating facilities, using various types of coal, that use  
8       coal as the primary feedstock as of the date of en-  
9       actment of this Act.

10       (e) FEDERAL SHARE.—The Federal share of the cost  
11   of a coal or related technology project funded by the Sec-  
12   retary under this subtitle shall not exceed 50 percent.

13       (f) APPLICABILITY.—No technology, or level of emis-  
14   sion reduction, shall be treated as adequately dem-  
15   onstrated for purposes of section 111 of the Clean Air Act  
16   (42 U.S.C. 7411), achievable for purposes of section 169  
17   of that Act (42 U.S.C. 7479), or achievable in practice  
18   for purposes of section 171 of that Act (42 U.S.C. 7501)  
19   solely by reason of the use of such technology, or the  
20   achievement of such emission reduction, by 1 or more fa-  
21   cilities receiving assistance under this subtitle.

22   **SEC. 403. REPORT.**

23       Not later than 1 year after the date of enactment  
24   of this Act, and once every 2 years thereafter through  
25   2014, the Secretary, in consultation with other appro-



1 priate Federal agencies, shall submit to Congress a report  
2 describing—

3 (1) the technical milestones set forth in section  
4 402 and how those milestones ensure progress to-  
5 ward meeting the requirements of subsections  
6 (b)(1)(B) and (b)(2) of section 402; and

7 (2) the status of projects funded under this  
8 subtitle.

9 **SEC. 404. CLEAN COAL CENTERS OF EXCELLENCE.**

10 As part of the program authorized in section 401,  
11 the Secretary shall award competitive, merit-based grants  
12 to universities for the establishment of Centers of Excel-  
13 lence for Energy Systems of the Future. The Secretary  
14 shall provide grants to universities that show the greatest  
15 potential for advancing new clean coal technologies.

16 **Subtitle B—Clean Power Projects**

17 **SEC. 411. COAL TECHNOLOGY LOAN.**

18 There are authorized to be appropriated to the Sec-  
19 retary \$125,000,000 to provide a loan to the owner of the  
20 experimental plant constructed under United States De-  
21 partment of Energy cooperative agreement number DE-  
22 FC-22-91PC90544 on such terms and conditions as the  
23 Secretary determines, including interest rates and upfront  
24 payments.





1 **SEC. 412. COAL GASIFICATION.**

2       The Secretary is authorized to provide loan guaran-  
3       tees for a project to produce energy from a plant using  
4       integrated gasification combined cycle technology of at  
5       least 400 megawatts in capacity that produces power at  
6       competitive rates in deregulated energy generation mar-  
7       kets and that does not receive any subsidy (direct or indi-  
8       rect) from ratepayers.

9 **SEC. 414. PETROLEUM COKE GASIFICATION.**

10       The Secretary is authorized to provide loan guaran-  
11       tees for at least 5 petroleum coke gasification projects.

12 **SEC. 416. ELECTRON SCRUBBING DEMONSTRATION.**

13       The Secretary shall use \$5,000,000 from amounts  
14       appropriated to initiate, through the Chicago Operations  
15       Office, a project to demonstrate the viability of high-en-  
16       ergy electron scrubbing technology on commercial-scale  
17       electrical generation using high-sulfur coal.

18               **Subtitle D—Coal and Related**  
19               **Programs**

20 **SEC. 441. CLEAN AIR COAL PROGRAM.**

21       (a) AMENDMENT.—The Energy Policy Act of 1992  
22       is amended by adding the following new title at the end  
23       thereof:



1    **“TITLE XXXI—CLEAN AIR COAL**  
2                   **PROGRAM**

3    **“SEC. 3101. FINDINGS; PURPOSES; DEFINITIONS.**

4           “(a) FINDINGS.—The Congress finds that—

5               “(1) new environmental regulations present ad-  
6           ditional challenges for coal-fired electrical generation  
7           in the private marketplace; and

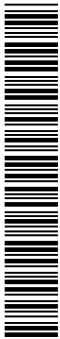
8               “(2) the Department of Energy, in cooperation  
9           with industry, has already fully developed and com-  
10          mercialized several new clean-coal technologies that  
11          will allow the clean use of coal.

12          “(b) PURPOSES.—The purposes of this title are to—

13               “(1) promote national energy policy and energy  
14           security, diversity, and economic competitiveness  
15           benefits that result from the increased use of coal;

16               “(2) mitigate financial risks, reduce the cost,  
17           and increase the marketplace acceptance of the new  
18           clean coal technologies; and

19               “(3) advance the deployment of pollution con-  
20           trol equipment to meet the current and future obli-  
21           gations of coal-fired generation units regulated  
22           under the Clean Air Act (42 U.S.C. 7402 and fol-  
23           lowing).



1   **“SEC. 3102. AUTHORIZATION OF PROGRAM.**

2           “The Secretary shall carry out a program to facilitate  
3   production and generation of coal-based power and the in-  
4   stallation of pollution control equipment.

5   **“SEC. 3103. AUTHORIZATION OF APPROPRIATIONS.**

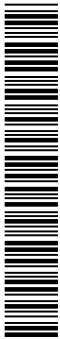
6           “(a) POLLUTION CONTROL PROJECTS.—There are  
7   authorized to be appropriated to the Secretary  
8   \$300,000,000 for fiscal year 2006, \$100,000,000 for fis-  
9   cal year 2007, \$40,000,000 for fiscal year 2008,  
10   \$30,000,000 for fiscal year 2009, and \$30,000,000 for fis-  
11   cal year 2010, to remain available until expended, for car-  
12   rying out the program for pollution control projects, which  
13   may include—

14           “(1) pollution control equipment and processes  
15   for the control of mercury air emissions;

16           “(2) pollution control equipment and processes  
17   for the control of nitrogen dioxide air emissions or  
18   sulfur dioxide emissions;

19           “(3) pollution control equipment and processes  
20   for the mitigation or collection of more than one pol-  
21   lutant;

22           “(4) advanced combustion technology for the  
23   control of at least two pollutants, including mercury,  
24   particulate matter, nitrogen oxides, and sulfur diox-  
25   ide, which may also be designed to improve the en-  
26   ergy efficiency of the unit; and



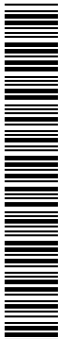
1           “(5) advanced pollution control equipment and  
2           processes designed to allow use of the waste byprod-  
3           ucts or other byproducts of the equipment or an  
4           electrical generation unit designed to allow the use  
5           of byproducts.

6 Funds appropriated under this subsection which are not  
7 awarded before fiscal year 2012 may be applied to projects  
8 under subsection (b), in addition to amounts authorized  
9 under subsection (b).

10          “(b) GENERATION PROJECTS.—There are authorized  
11 to be appropriated to the Secretary \$250,000,000 for fis-  
12 cal year 2007, \$350,000,000 for fiscal year 2008,  
13 \$400,000,000 for fiscal year 2009, \$400,000,000 for fis-  
14 cal year 2010, \$400,000,000 for fiscal year 2011,  
15 \$400,000,000 for fiscal year 2012, and \$300,000,000 for  
16 fiscal year 2013, to remain available until expended, for  
17 generation projects and air pollution control projects.  
18 Such projects may include—

19           “(1) coal-based electrical generation equipment  
20           and processes, including gasification combined cycle  
21           or other coal-based generation equipment and proc-  
22           esses;

23           “(2) associated environmental control equip-  
24           ment, that will be cost-effective and that is designed  
25           to meet anticipated regulatory requirements;



1           “(3) coal-based electrical generation equipment  
2           and processes, including gasification fuel cells, gas-  
3           ification coproduction, and hybrid gasification/com-  
4           bustion projects; and

5           “(4) advanced coal-based electrical generation  
6           equipment and processes, including oxidation com-  
7           bustion techniques, ultra-supercritical boilers, and  
8           chemical looping, which the Secretary determines  
9           will be cost-effective and could substantially con-  
10          tribute to meeting anticipated environmental or en-  
11          ergy needs.

12          “(c) LIMITATION.—Funds placed at risk during any  
13          fiscal year for Federal loans or loan guarantees pursuant  
14          to this title may not exceed 30 percent of the total funds  
15          obligated under this title.

16       **“SEC. 3104. AIR POLLUTION CONTROL PROJECT CRITERIA.**

17          “The Secretary shall pursuant to authorizations con-  
18          tained in section 3103 provide funding for air pollution  
19          control projects designed to facilitate compliance with  
20          Federal and State environmental regulations, including  
21          any regulation that may be established with respect to  
22          mercury.

23       **“SEC. 3105. CRITERIA FOR GENERATION PROJECTS.**

24          “(a) CRITERIA.—The Secretary shall establish cri-  
25          teria on which selection of individual projects described in



1 section 3103(b) should be based. The Secretary may mod-  
2 ify the criteria as appropriate to reflect improvements in  
3 equipment, except that the criteria shall not be modified  
4 to be less stringent. These selection criteria shall include—

5 “(1) prioritization of projects whose installation  
6 is likely to result in significant air quality improve-  
7 ments in nonattainment air quality areas;

8 “(2) prioritization of projects that result in the  
9 repowering or replacement of older, less efficient  
10 units;

11 “(3) documented broad interest in the procure-  
12 ment of the equipment and utilization of the proc-  
13 esses used in the projects by electrical generator  
14 owners or operators;

15 “(4) equipment and processes beginning in  
16 2006 through 2011 that are projected to achieve an  
17 thermal efficiency of—

18 “(A) 40 percent for coal of more than  
19 9,000 Btu per pound based on higher heating  
20 values;

21 “(B) 38 percent for coal of 7,000 to 9,000  
22 Btu per pound based on higher heating values;  
23 and

24 “(C) 36 percent for coal of less than 7,000  
25 Btu per pound based on higher heating values,



1       except that energy used for coproduction or cogen-  
2       eration shall not be counted in calculating the ther-  
3       mal efficiency under this paragraph; and

4               “(5) equipment and processes beginning in  
5       2012 and 2013 that are projected to achieve an  
6       thermal efficiency of—

7               “(A) 45 percent for coal of more than  
8       9,000 Btu per pound based on higher heating  
9       values;

10              “(B) 44 percent for coal of 7,000 to 9,000  
11       Btu per pound based on higher heating values;  
12       and

13              “(C) 40 percent for coal of less than 7,000  
14       Btu per pound based on higher heating values,  
15       except that energy used for coproduction or cogen-  
16       eration shall not be counted in calculating the ther-  
17       mal efficiency under this paragraph.

18       “(b) SELECTION.—(1) In selecting the projects, up  
19       to 25 percent of the projects selected may be either co-  
20       production or cogeneration or other gasification projects,  
21       but at least 25 percent of the projects shall be for the  
22       sole purpose of electrical generation, and priority should  
23       be given to equipment and projects less than 600 MW to  
24       foster and promote standard designs.



1 “(2) The Secretary shall give priority to projects that  
2 have been developed and demonstrated that are not yet  
3 cost competitive, and for coal energy generation projects  
4 that advance efficiency, environmental performance, or  
5 cost competitiveness significantly beyond the level of pollu-  
6 tion control equipment that is in operation on a full scale.

7 **“SEC. 3106. FINANCIAL CRITERIA.**

8 “(a) IN GENERAL.—The Secretary shall only provide  
9 financial assistance to projects that meet the requirements  
10 of sections 3103 and 3104 and are likely to—

11 “(1) achieve overall cost reductions in the utili-  
12 zation of coal to generate useful forms of energy;  
13 and

14 “(2) improve the competitiveness of coal in  
15 order to maintain a diversity of domestic fuel choices  
16 in the United States to meet electricity generation  
17 requirements.

18 “(b) CONDITIONS.—The Secretary shall not provide  
19 a funding award under this title unless—

20 “(1) the award recipient is financially viable  
21 without the receipt of additional Federal funding;  
22 and

23 “(2) the recipient provides sufficient informa-  
24 tion to the Secretary for the Secretary to ensure





1       that the award funds are spent efficiently and effec-  
2       tively.

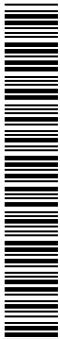
3       “(c) EQUAL ACCESS.—The Secretary shall, to the ex-  
4       tent practical, utilize cooperative agreement, loan guar-  
5       antee, and direct Federal loan mechanisms designed to en-  
6       sure that all electrical generation owners have equal access  
7       to these technology deployment incentives. The Secretary  
8       shall develop and direct a competitive solicitation process  
9       for the selection of technologies and projects under this  
10      title.

11   **“SEC. 3107. FEDERAL SHARE.**

12       “The Federal share of the cost of a coal or related  
13      technology project funded by the Secretary under this title  
14      shall not exceed 50 percent. For purposes of this title,  
15      Federal funding includes only appropriated funds.

16   **“SEC. 3108. APPLICABILITY.**

17       “No technology, or level of emission reduction, shall  
18      be treated as adequately demonstrated for purposes of sec-  
19      tion 111 of the Clean Air Act (42 U.S.C. 7411), achievable  
20      for purposes of section 169 of the Clean Air Act (42  
21      U.S.C. 7479), or achievable in practice for purposes of  
22      section 171 of the Clean Air Act (42 U.S.C. 7501) solely  
23      by reason of the use of such technology, or the achieve-  
24      ment of such emission reduction, by one or more facilities  
25      receiving assistance under this title.”.



1 (b) TABLE OF CONTENTS AMENDMENT.—The table  
2 of contents of the Energy Policy Act of 1992 is amended  
3 by adding at the end the following:

“TITLE XXXI—CLEAN AIR COAL PROGRAM

- “Sec. 3101. Findings; purposes; definitions.
- “Sec. 3102. Authorization of program.
- “Sec. 3103. Authorization of appropriations.
- “Sec. 3104. Air pollution control project criteria.
- “Sec. 3105. Criteria for generation projects.
- “Sec. 3106. Financial criteria.
- “Sec. 3107. Federal share.
- “Sec. 3108. Applicability.”.

